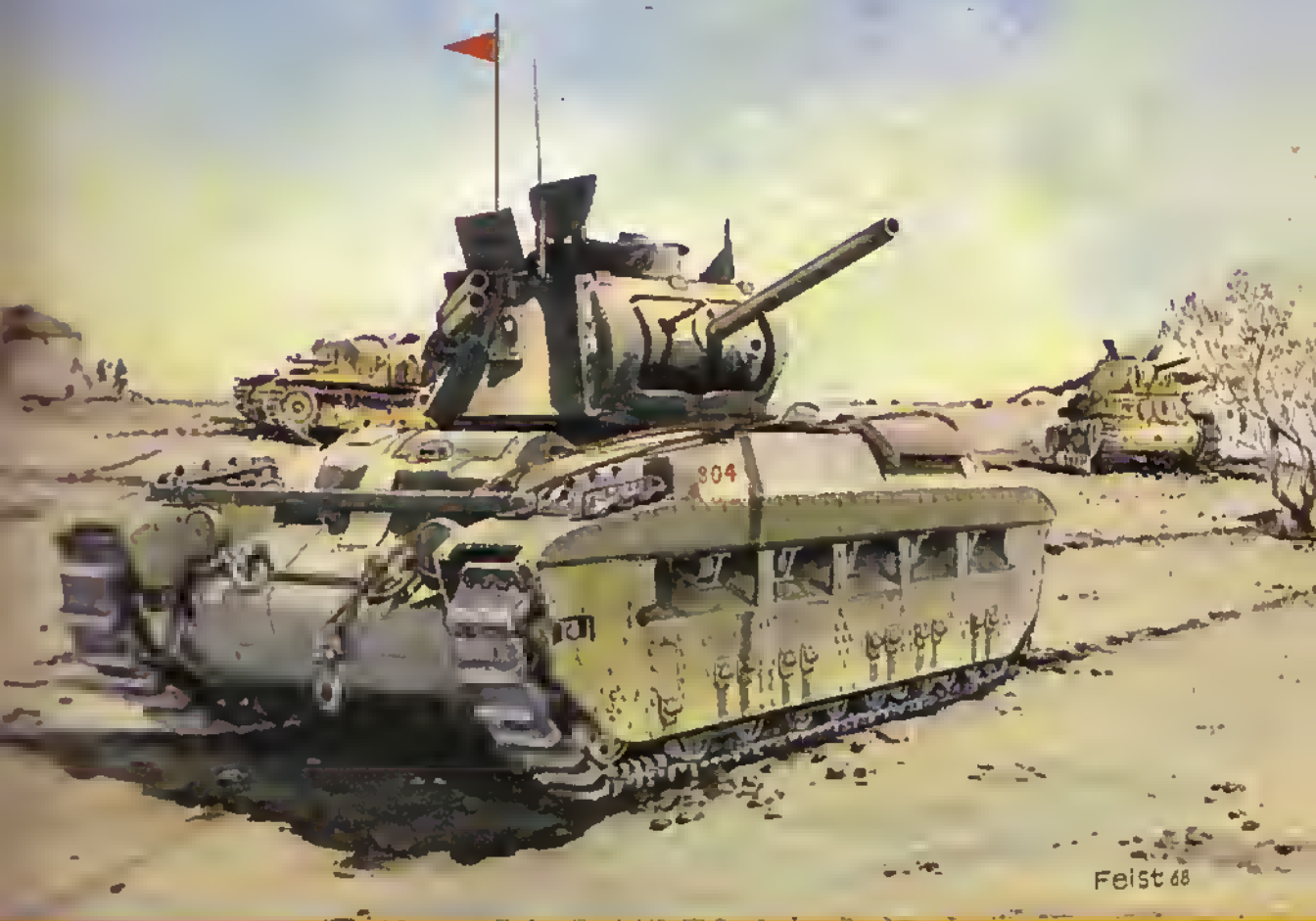


ARMOR

in the Western Desert



Feist 68



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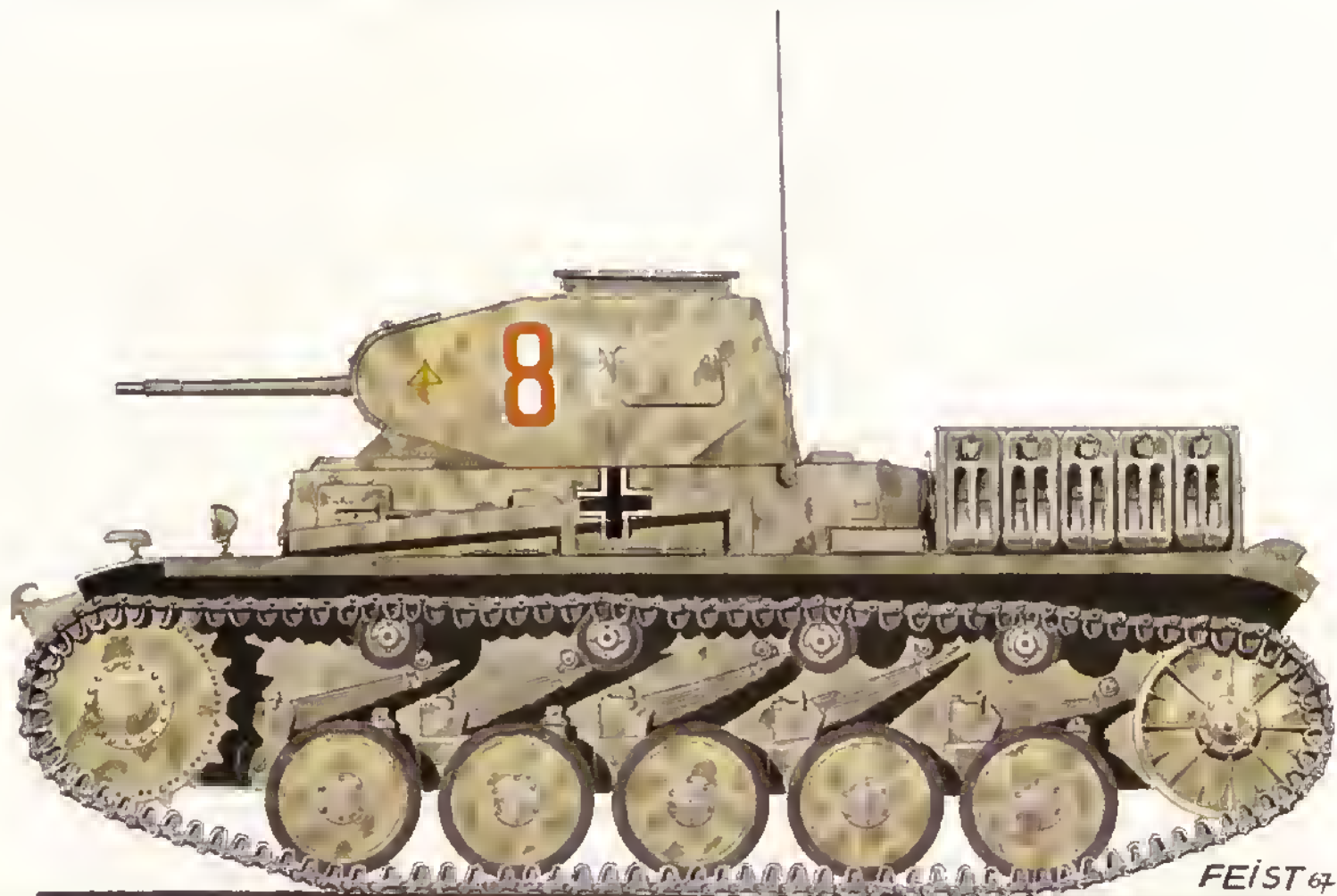
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British Infantry Tank Mk IIA "MATILDA IV"

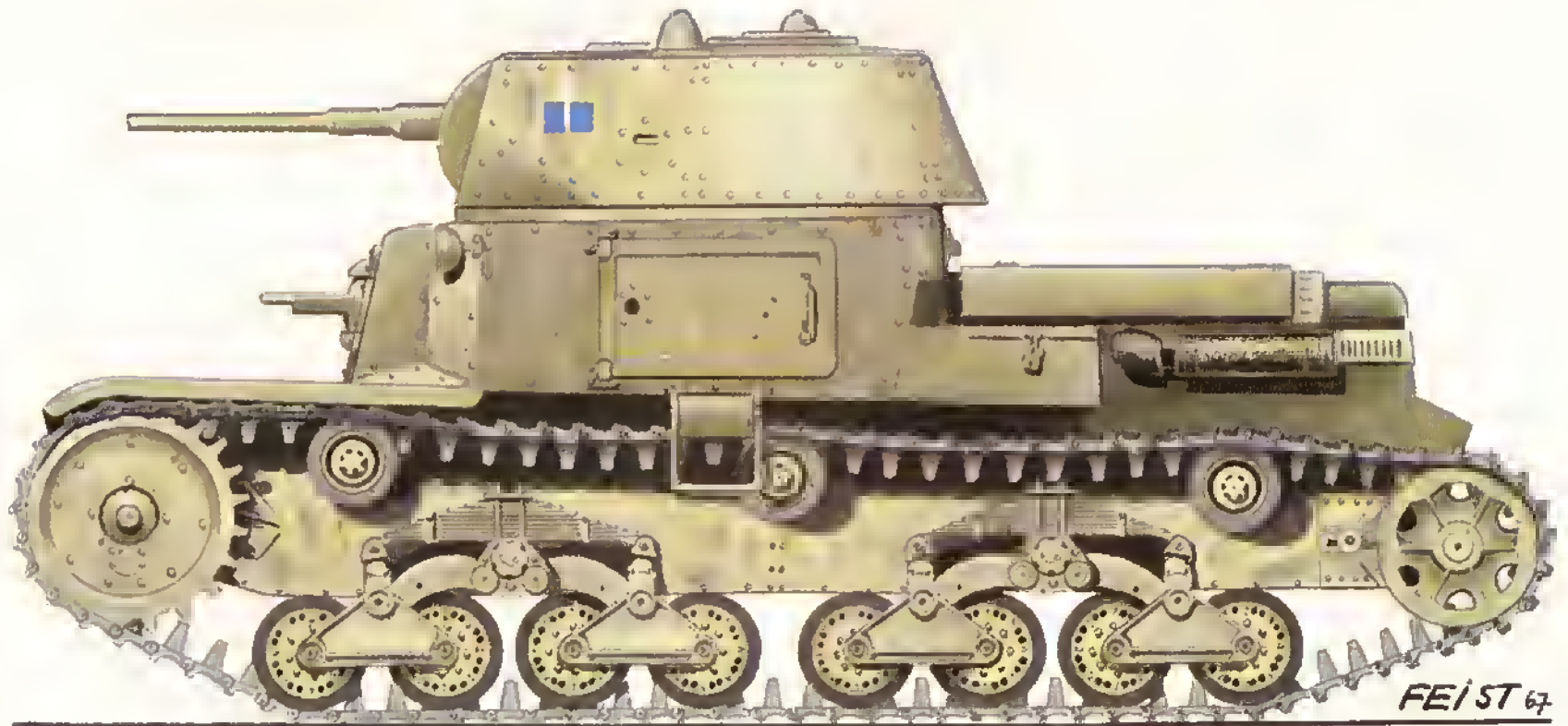


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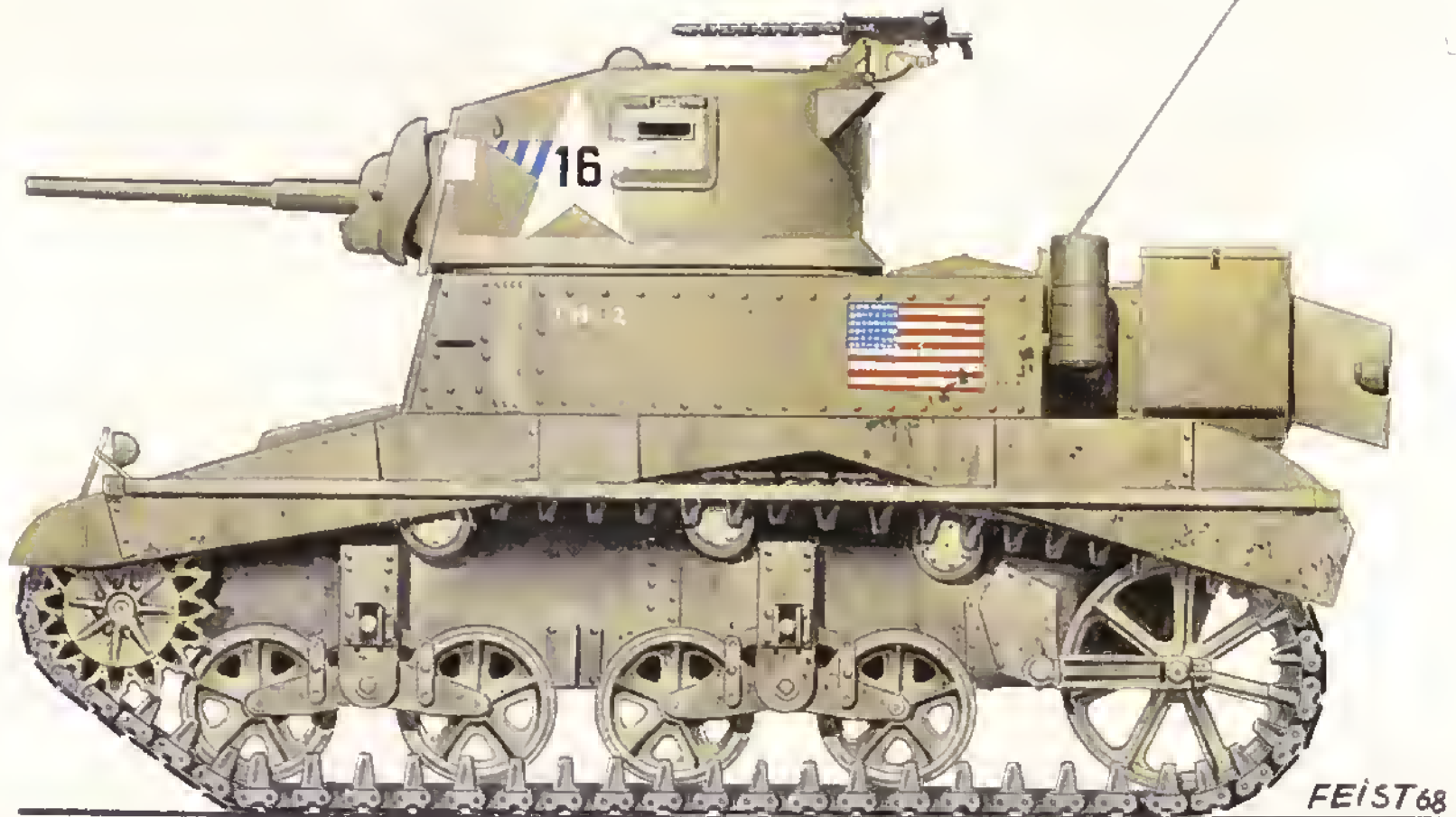
Afrika Korps Panzerkampfwagen II (A,B) 15. Panzer Div.



Italian Fiat-Ansaldo M 13/40



U.S. Light Tank M3 A1 "Stuart"



ARMOR SERIES VOL. 8

ARMOR in the Western Desert

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ARMOR IN THE WESTERN DESERT

(A GERMAN VIEWPOINT)

by

WALTER J. SPIELBERGER

After Italy's entry into the war against France and England in 1940, it became obvious that the next confrontation between the adversaries was most likely to happen in North Africa. Everybody was aware that the dominion of the Mediterranean was of utmost importance, and even decisive for a successful conclusion of hostilities. The British Army was responsible for the defense of Egypt, while strong Italian forces were concentrated in Libya. After considerable preparations, Italian troops under General Graziani crossed the border into Egypt on September 9, 1940. After some initial successes, they were halted and driven back deep into their own territory. This first confrontation of armored forces revealed rather quickly the poor condition of the Italian armored vehicles. Used mainly in small numbers for direct infantry support, these L/3 and M/11 tanks proved to be an almost total failure. By February, 1941, an improved version of the M/11, the M/13, appeared, having finally the main armament, a 47 mm gun, in a fully-rotating turret. During this time, the British forces were equipped with Valentine and Matilda infantry tanks, some Mark I (A.9) and Mark II(A.10) cruiser tanks which were supposed to be replaced by Mk. IV, the Govenanter. This vehicle, however, proved to be mos' unreliable; thus, the main equipment within the cruiser series became the Mk. VI, or Crusader, which was used in numbers until the end of the campaign in 1943.

Italy's defeat forced upon the German High Command the necessity to support the faltering Italian forces by means of an expeditionary corps. Both the 5th Light and the 15th Panzer division were elected to go to North Africa under the command of Field Marshal Erwin Rommel. Immediately upon his arrival and without waiting for reinforcements, Rommel started his offensive against the British forces and had recaptured Libya within two weeks. Available to the German troops were limited numbers of all four makes of tanks, namely the Panzer I, II, III and IV. Again, it soon proved to be not the numerical superiority but the tactical application of tanks which brought about stunning successes. The final victory in North Africa, everybody was aware, was mainly determined by the availability of sufficient supplies; and British attempts to thoroughly interrupt Axis communication lines, in the Mediterranean were finally responsible for the collapse of the Axis powers in Tunisia in May of 1943.

November, 1941, saw a new British offensive in an attempt to recapture Libya. In some of the greatest tank battles of the war, fought around Sollum, almost 800 British tanks were destroyed or captured. Despite initial British successes, Rommel's counter-attacks had soon established a balance again and by the beginning of February, 1942, both sides remained stationary in their positions. By spring of 1942, continued supplies accounted for the following distribution of armored vehicles:

(MAY 26, 1942)

GERMAN		RESERVES		BRITISH	
Panzer II	50	PzKw II	10	Grant	167
Panzer III	223	Pz. III	38	Stuart	149
Panzer III Sp.	19	Pz. III Sp.	19	Crusader	257
Panzer IV	40	Pz. IV	1	Valentine	166
		Pz. IV Sp.	9	Matilda	110
	332				849
		77			
ITALIAN				RESERVES	
M13/40, 14/41	228			Grant	75
	560			Stuart	70
					145

Despite these facts, Rommel decided to attack on the 26th of May, 1942. For the first time, American M3 "General Grant" tanks opposed the German forces and inflicted heavy casualties. The continued German advance resulted finally in the capture of Tobruk. With his remaining 80 tanks, Rommel pressed into Egypt until his exhausted troops, stripped of supplies, had to stop in order to regenerate their depleted ranks. Only 50 German Panzers were still in operation at this time.

The balance of power during this time had shifted in favor of the Allies since the United States entered the war. On October 23, 1942, the British counter-attacked with overwhelming force. The following tank strength was available to the British (9-23-42):

- 170 Grants
- 252 Shermans
- 216 Crusaders I and II
- 78 Crusaders III
- 119 Stuarts
- 194 Valentines, or a grand total of

1029 tanks

The new Sherman tanks especially proved to be quite an improvement over previous tank designs.

Against this armored force, the Germans could muster:

- 85 Panzer III L/42
- 88 Panzer III L/60
- 8 Panzer IV L/24
- 30 Panzer IV L/43. Reserves hardly existed.

Only German anti-tank guns were prominently engaged and they kept delaying the British forces which soon penetrated and out-flanked the German and Italian defenders.

Without supplies and air cover, the Axis powers retreated and established a final foothold near Agadabio by the middle of November.

In the meantime, American forces had landed on the 8th of November, 1942, in Morocco and Algiers. Despite the hopeless situation, Hitler decided to throw additional troops into North Africa in a final attempt to stabilize the front and to maintain his grip on this vital part of Africa. Even a "Tiger" outfit, the Panzer Battalion 501, was transferred to Tunisia. It was all in vain. By the end of January, 1943, General Eisenhower attacked with 15 British and 5 American divisions. The end came on May 12, 1943, when approximately 250,000 German and Italian soldiers surrendered in Tunisia. The war in Africa was over. North Africa was lost by the Axis powers and the whole soft underbelly of Europe lay open to any attack the Allies chose to mount.

In viewing the firepower of the armored fighting vehicles used in this desert war, one can come to rather interesting comparisons. Disregarding the vehicles equipped only with machine guns, namely the Italian L/3, the German Panzer I and also the Panzer II, with its 2 cm gun, and the British light tank Mk VI, the variety of weapons used on all other vehicles reflected, to a large degree, the military thinking of each one of the nations involved. Italy's M/11 was a three-man 11-ton vehicle, with a 37 mm gun in limited traverse, which was mounted in the right front plate of the vehicle. Two MG's were carried in a fully-rotating turret. Its successor, the M/13, had most of its predecessor's handicaps eliminated and mounted a 47 mm gun in a two-man turret. The M/42, an improved version, carried a longer 47 mm gun but was almost identical with the M/13. Finally, but already too late, their P/40, a 25-ton four-man tank, appeared in 1943. It came equipped with a medium-velocity, turret-mounted 75 mm gun. Britain even used up some of their old Medium Mk II, equipped with a 47 mm gun and six machine guns at the beginning of the campaign. Since these vehicles dated back to 1924, they were rather quickly phased out and replaced with the Cruiser tanks Mk I and II. Both vehicles carried a 40 mm gun. The Cruisers Mk III and IV followed, still carrying the same main armament. The Crusader series started with the Mk VI/I and II, still mounting a 40 mm weapon, while the third version finally carried a 57 mm gun. It represented the heaviest weapons mounted on a British battle tank used in Africa. Their infantry tanks "Matilda" and "Valentine" originally also had the 40 mm gun, considered inadequate against contemporary German vehicles. As of 1943, the American tank production by far exceeded British capabilities. American vehicles in substantial numbers found their way into British tank outfits and as a matter of fact, the American M 4 "Sherman" tank became the principle tank of the Royal Tank Corps. The first U.S. tank issued to British units in large quantities was the light tank M 3 and its improved version, the M 5. Both vehicles were equipped with a 37 mm gun and had a four-man crew. Called "Stuart" by the British, it also had the nickname "Honey." They served both British and U.S. forces throughout the war. The medium

tank development had started in 1938, creating the Medium M 2, having a 37 mm gun mounted in the turret, while eight machine guns were also installed. By August of 1940, a 75 mm tank gun was demanded, and the M 3 medium tank was created. It was a 27-ton vehicle, with a 75 mm gun mounted in a sponson on the right front portion of the hull. In addition a 37 mm gun was installed in the turret. Called "General Lee" and "General Grant" by the British, it provided a rather nasty surprise for the Germans in 1942. The limited traverse of the main armament, however, restricted the use of these vehicles considerably, and the following model, the M 4, had the 75 mm gun moved to the turret. Better known as "Sherman," this tank was one of the most-built fighting vehicles during the war and saw action in all theaters. A total of 49,234 M 4 vehicles was produced until 1945.

Germany's appearance in North Africa brought the tried and proven Panzer III and IV to the battlefields. The most numerous of the two, the Panzer III, was equipped with the 5 cm KwK 39 L/42, a high-velocity weapon considered quite adequate against existing British vehicles. The experience in Russia against the T 34 soon revealed its shortcomings and resulted in a lengthening of the barrel to 3000 mm in 1941. They appeared in Africa for the first time toward the end of the same year. The larger vehicle, the Panzer IV, originally intended only as a support vehicle, mounted for this purpose a low-velocity, short-barrelled 75 mm gun. Its ineffectiveness against enemy armor was soon evident and the up-gunning process started immediately after its sad experience in Russia. Starting in March of 1942, the first Panzer IV with the 7. 5 cm KwK 40 L/43 appeared on battle fields, giving the Germans again an advantage in fire power. Soon after, the final version of the gun, an L/48, was in production. It participated during the closing stage of the African campaign and was capable of defeating any existing Allied armor. The appearance of the 88 mm gun as a tank armament in Africa was brief and insignificant. Its counter-part, however, the anti-aircraft version, used considerably for anti-tank purposes, established itself as an excellent anti-tank weapon during World War II and wrote a chapter in war history unforgettable to anybody who had experienced this weapon in action.

In retrospect, the African continent allowed for textbook-like application of armored forces on either side. It became obvious soon that the German concept of armor application was superior to the British principle of attaching tank forces to infantry units. Also, the controversy raging in England for decades whether or not the separation of infantry and Cruiser tanks should be maintained was finally answered. By July of 1944, Field Marshal Montgomery finally proposed the elimination of a division between the two kinds of British battle tanks. It took until 1946, however, for this proposal to become official policy and resulted in the adaptation of the so-called "Capital tank," the "Centurion."

We wish to acknowledge our appreciation
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Starting in February of 1941, German Panzer units were prepared for their duty in North Africa. Here tank soldiers of the 15th Panzer division are being briefed about their final destination. A Panzer IV Ausf. E shows preparations for shipment with additional water supply stowed on the turret roof of the vehicle.

Tank destroyer units, shipped to Africa, were initially equipped with Panzer I self-propelled mounts, carrying the 47 mm Czech AT gun.



Upon arrival in Libya, armored cars are unloaded and made ready for Rommel's first offensive against British forces. Picture shows an Sd. Kfz. 222, a light German reconnaissance vehicle.





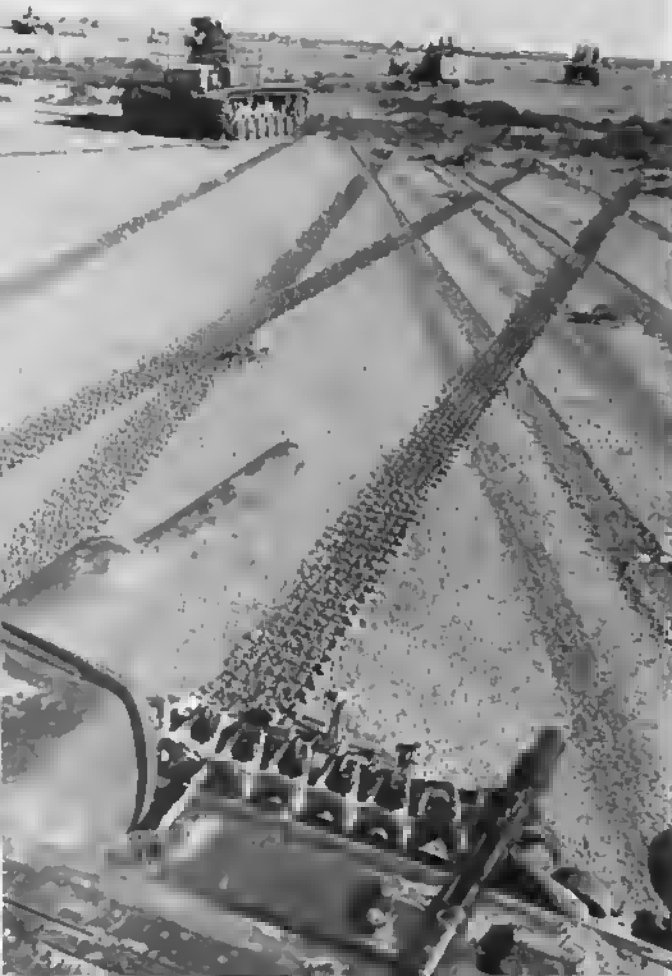
Used in substantial numbers for towing medium and heavy artillery, German half-track tractors are being taken off boats. Vehicle shown is a 5-ton medium artillery tractor.

A Panzer IV has just been put on a pier in North Africa. This is an F version of one of the most versatile fighting vehicles of the German armored force.





A parade concluded the arrival of the first German troops on African soil. Here an F version of the Panzer III is shown in Tripoli. Note the "reception committee" consists mainly of Italian soldiers and sailors.



Soon the desert was covered with tank tracks, a typical sign of armored warfare demonstrating the change of military thinking within most nations. A highly sophisticated fighting machine left its footprints in the sand and reflected the advanced concept of armored warfare as demonstrated in the following month by the late Field Marshal Erwin Rommel.



Italian armor had made a rather poor showing during previous encounters with the British. Here, a column of Italian M13/40 medium tanks is shown during a counter-attack.



It was not always the lack of fighting spirit of the Italian soldiers which had determined to a large extent the outcome of previous battles but the obvious inferiority of Italian equipment. Their tanks were no exception.



Together with the German Afrika Korps, the Italians recaptured most of Libya within two weeks and acquired substantial war equipment that the British had left behind.



It was put to good use by the Italians, who had lost considerable equipment to the British during the first encounters of the war.

Spearheading the German advance were armored cars of the Fifth Light and the 15th armored divisions. Continuous fighting forced the crew of this Sd. Kfz. 222 to replace its main armament, a 2 cm gun.



It was soon a common sight in the western desert to see German scout cars on reconnoiter missions. The open turret of this standard German light armored car was protected by means of a wire mesh.

The radio version of the light armored car provided most valuable information to the German High Command. They were on duty almost continuously.

A mobile, armored radio station somewhere in Cyrenaica. Without their presence, it would have been impossible to gather the intelligence data necessary for proper conduct of the war.





Soon some captured vehicles became available for the German forces, and they were put to good use. This South African Marman-Herrington armored car is providing an important screen around British traps accompanied by German medium and heavy standard military passenger cars.



British vehicles and British supplies determined to a large degree the outcome of many a battle, since Germany's supply lines were always subject to continuous British attacks.



All of the German vehicles used during this campaign had received basic alterations to make them more suitable for this theater of war. Cooling fans and air filters were changed and the maintenance crews trained to cope with the different environments. This German 8-wheeled armored car has protection for its main armament and shows the additional armor shield mounted on the bow of the vehicle.

Engine failures, however, were numerous, since the basic vehicles had never been designed for this hot climate.



An armored radio vehicle during a mission. Received information was quickly relayed by car or motor-cycle, seen close to the armored car.



A dry creekbed is negotiated by an armored radio vehicle. One of its most outstanding features was the absence of a rotating turret and a rather large antenna spanning the entire length of the vehicle.



During their first encounters, a number of British fighting vehicles fell into German hands. Picture shows a captured British "Matilda" Infantry tank, accompanying a German Panzer I, a light vehicle never intended to be used as a fighting vehicle.

These light German vehicles soon fell prey to British anti-tank weapons and to land mines. This vehicle, an Ausfuehrung A of the Panzer I, was put out of action by a mine which did considerable damage to its running gear.





The Ausführung B of the same vehicle was more numerous but could also only be used as a reconnaissance vehicle. It provided the British with a first inside view into German tank designs and all captured vehicles were subjected to intensive investigations.



The Panzer I chassis was also used as a basis for a self-propelled gun, mounting the Czech 47 mm anti-tank gun. It was the first of a long series of similar conversions.

For prolonged movements, most tracked vehicles were loaded onto flatbed trailers, towed mainly behind half-track tractors.



They provided enough back-up fire power for German Infantry units and served an important role in checking English armor attacks.



Also based upon the Panzer I chassis was this command version, an important vehicle to provide vital communication between armored formations. This unit was equipped with only one machine gun.



The second vehicle in the German tank inventory was the Panzer II. A light tank with a crew of three, it was armed with one 20 mm gun and an MG in a rotating turret. Available in substantial numbers, it had played an important part during previous campaigns. It again proved most reliable during the battles in Africa.

Used mainly for reconnaissance purposes, these vehicles were also quite often used to outflank enemy units and thus participated considerably in many a German victory.



The effects of sand storms in the Libyan desert can be seen on this Panzer II. Paint was removed as quickly as it was applied. Antenna protection is evident on the left side of the vehicle.



Panzer II ready for action. This vehicle is used by armored engineers mainly to detect enemy mine fields. Half-track vehicle in back is a 1-ton tractor, used frequently to tow the 50 mm anti-tank gun.

TILMUN
SOLLUM

Panzer II on their way to Sollum. Vehicle in picture carries the Regiment's doctor, who was available with front echelons during all battles.

Continuous battles, raging back and forth along the Mediterranean coast, rendered large numbers of prisoners of war on either side. Here a Panzer II passes along a group of British soldiers on their way to a German prisoner of war camp.



Although too light to engage the British Infantry tanks, the Panzer II in Africa provided adequate fire power against soft-skinned vehicles. They were phased out as battle tanks by the end of 1942.



Interesting is this picture of a captured British medium Mark II. This "veteran" was still in use at the beginning of the campaign, despite the fact that its origin dated back as far as 1926. Passenger car in foreground is a standard medium staff car of the German Army.



These vehicles were completely obsolete against the German tanks but had held their own during previous encounters with the Italians. Note that the tank must have been on fire.

The long series of "Cruiser" tanks encountered in Africa led by this Mark IV A, a vehicle equipped with a 40 mm gun. They were fast but technically not too reliable.



Out-gunned by the German Panzer III, these vehicles were captured in numbers during the initial phases of the North African campaign.



A captured British staff car reveals its contents to members of the "Afriko Korps." Vehicle in background is the military version of the Volkswagen, used as a standard light passenger car by the Wehrmacht.



One of the most versatile British armored vehicles was the "Bren Carrier" used for both towing and supply purposes. It served as a prime mover for anti-tank guns and provided Infantry with armor protection.



Uniforms and equipment for the German troops in Africa were especially prepared for warfare in the desert. This standard medium passenger car mounts an MG 34 for protection against British fighter bombers.



The smallest of the German half-track tractors used in Africa was the 1-ton Zgkw. It was the main prime mover for anti-tank guns and also served as a troop carrier.



German anti-tank guns helped to check British tank attacks. Here 50 mm guns are towed behind 1-ton half-track tractors preparing for an encounter with enemy armored forces.



The tank which did most of the fighting on the German side during the initial phases of the campaign was the Panzer III. Initially equipped with a 37 mm gun, vehicles used in Africa generally had the 50 mm KwK L/42. Later German tanks had a five-man crew.



The additional spaced armor, mounted to the front portions of the vehicle, was provided to off-set the effectiveness of the latest British anti-tank weapons. Note the gunner exit on the left side of the turret.



An Ausfuehrung F of the Panzer III, recognizable by its final drive and idler wheels. Jerry cans stored on the turret roof contain water.

Panzer III, followed by Panzer II, during their advance toward Sollum. Note the tropical helmets originally issued to members of the "Afriko Korps."





Crew members reodying a Ponzer III for further action. The abrasive impact of the desert sand necessitated tight closing of all openings. Spare track links were carried on the front plate to offord additional protection.

This is the Ausf. H of the some vehicle. Note the difference in finol drive and idler wheels and also the different spocing of the return rollers. 400 mm tracks were used for the first time.





Some of these vehicles, captured by the British, were returned to England for thorough investigation.

As of 1942, the longer barreled 5 cm tank guns became available and were soon installed in the J version of the Panzer III. Armor penetration was increased considerably.





The command version of the Panzer III carried a dummy main armament and had one MG 34 installed in the mantlet of its fixed turret. This vehicle had obviously received a hit which did not penetrate.

Some of the early command tanks were based upon the F version of the Panzer III. This vehicle is being re-fueled by means of Jerry cans, a space-saving container also most popular with the Allies. Cans containing water were always identified with a white cross.





Some of the early 37 mm vehicles of the Panzer III series, the Ausf. E, carried two machine guns in the gun mantlet. They were used exclusively by staff officers and for observation purposes. Note the insignia of the Afrika-Korps painted beside the driver vision slot. The vehicle belonged to the 15th Panzer Division.



Captured "Tommies" are being briefed by a German officer in front of a Panzer III. Treatment of prisoners of war was exceedingly fair on either side in Africa.



The British Crusader tank series replacing earlier Cruisers started with this version. Note the machine gun turret mounted on the left front plate of the superstructure, a typical identification feature for this Mark.

Another Crusader out of action showing considerable damage by fire. These lightly-armored vehicles were easily defeated by the German 50 mm anti-tank weapons.





Mechanical breakdowns and mine damages added to the long list of British tank casualties. Note the sand shields mounted in a fender-like fashion; most of the British full-tracked fighting vehicles were thus equipped.

Crusader II tanks had slightly increased armor protection and other minor modifications. The final version, the Crusader III, was up-gunned with a 57 mm weapon.





The impact of German tank and anti-tank weapons is clearly demonstrated by this penetration of a 50 mm shell right below the gun mantlet.

Many of the captured fighting vehicles were soon recovered and, if possible, used against their former owners. Here, a Crusader is loaded on a 24-ton low-bed trailer, the standard equipment for German armored recovery forces. Prime mover for this trailer was the 18-ton half-track tractor shown in the background.





Apart from the Cruiser tanks, the so-called Infantry tanks played an important role in the Royal Tank Corps. Picture shows a Mark III Valentine Infantry tank put out of action by German tank guns.

Some of the destroyed tanks provided excellent observation points, like this disabled Valentine left behind somewhere in the desert.





A brief discussion between Field Marshal Rommel and Italian Generals takes place under the protection of Italian "Semovente" assault guns, equipped with the 7.5 cm L/18 gun.

Marshal Rommel used extensively armored half-track personnel carriers. He is also known to have used on many occasions a captured British A.E.C. armored command vehicle.





Armored half-tracks also served as vital communication centers to guide armored forces widely scattered throughout the desert. Note the typical frame antenna used on most armored radio vehicles of this period.

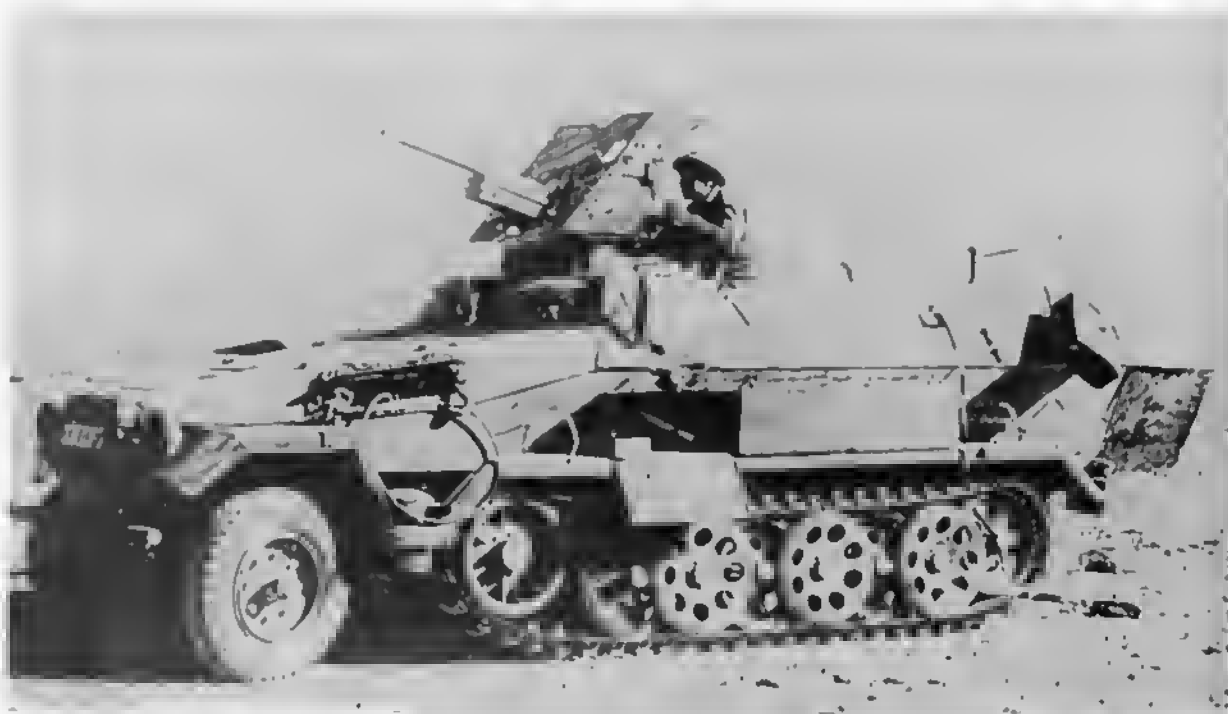
An armored communication vehicle with its fighting compartment protected by means of a canvas cover waits for further orders. An MG 34 on a tripod is set up for use against British fighter bombers.





Armored ambulances served friend and foe alike. Note the absence of any armament on these vehicles. Basic vehicle was the standard 3-ton armored personnel carrier, a half-track vehicle.

Platoon leader half-track vehicles had the standard 37 mm anti-tank gun mounted behind the original armor shield. They were intended to support armored infantry units.





A battle scene in Tunisia, toward the end of the campaign, shows a German armored personnel carrier accompanied by its captured American counter-part. Contrary to the American version, the front axle of the German vehicle was not driven.

Immobilized by a land mine, this armored half-track was left behind by retreating German troops. Open boxes, on either side contained tools and personal belongings of the crew.





A Russian 7.62 cm anti-tank gun mounted on the Czech Praga 38 t chassis was used in numbers on the Russian front. Some of them found their way to Africa, where they complicated considerably the already over-extended supply system. The weapon itself was capable of destroying any existing Allied armor.

The same gun, without a muzzle brake mounted on a Buessing-NAG 5-ton half-track chassis. This rare modification existed only in two prototype vehicles and was especially developed for the African theater of war. Light armor protection for the fighting compartment was provided.





Another rare vehicle, making its appearance in Africa, was this wheel-cum-track observation armored car. Originally an Austrian Army design, it was taken over by the German Wehrmacht, but proved soon to be mechanically too unreliable.

Continuous supply was assured to the British from the United States. Among them was a considerable number of armored fighting vehicles. Loaded on trains, they made their journey from Alexandria to the front. Vehicles seen are light tanks M 3, called Stuart, and medium M 3 Grant tanks.





The first American tanks to arrive at the battlefield were soon in action and quite often felt the impact of German anti-tank weapons. This "Honey" received a direct hit into the driver compartment.

A number of them were captured after they had run out of fuel and some were used for evaluation tests by engineering outfits of the German Army.



Tank ruins in the desert sand were a familiar sight and marked the end of every battle. Land mines did much of the damage.



Although quite a surprise to the Germans, these M 3 medium tanks with their excellent firepower fell victim to attacking German tank outfits. Note the addition of sand shields by the British.





Exploding ammunition left nothing but a pile of junk iron of this M 3 tank. Note the limited traverse provided for the 75 mm gun. Its heavy armor protected it against smaller German weapons.

Canada and the United States also supplied a large percentage of the soft-skinned transport vehicles to the British Army. Picture shows a four-wheel drive Dodge truck used in numbers by the English.





The only German armored fighting vehicle, designed before the war and continued to be produced throughout the war, was the Panzer IV. Originally intended only as a support vehicle for the Panzer III, it soon became the main battle tank of the German armored forces.



Its main armament was originally a short-barrelled, low-velocity 75 mm gun which was rather ineffective against enemy armor.



This is an E version of the Panzer IV, with the distinctive step-like frontal plate, protected subsequently by additional armor.

This disabled Panzer IV had its spaced armor blown off by a shell impact. A veteran of the campaign in France in 1940, it shows an inscription on the driver compartment indicating the death of a crew member during this battle.





Far-sighted planning allowed for a turret race on the original vehicle which could very well accommodate larger guns. Note the African-style helmet on the side of the vehicle.

Again forced upon the Germans by their experience in Russia, a long-barrelled, high-velocity weapon was substituted, enabling this vehicle to engage any existing enemy armor. The first version of the 7.5 cm KwK 40 L/43 still had a single baffle, ball-shaped muzzle brake. Vehicle is an Ausfuehrung F 2.





The following G version had the same gun, but a double baffle muzzle brake. Starting with the F version, all Panzer IV received the double turret hatches of the Panzer III. Turret side vision slots were also eliminated.

The last two versions of the Panzer IV, the Ausfuehrung H and J, had an even longer gun, the 7.5 cm KwK 40 L/48. Vehicle is shown during the final stages of the campaign in Tunisia.



The 12-ton half-track tractor served as a prime mover for heavy artillery and was also used for supply purposes. Here it is shown towing an Italian trailer.

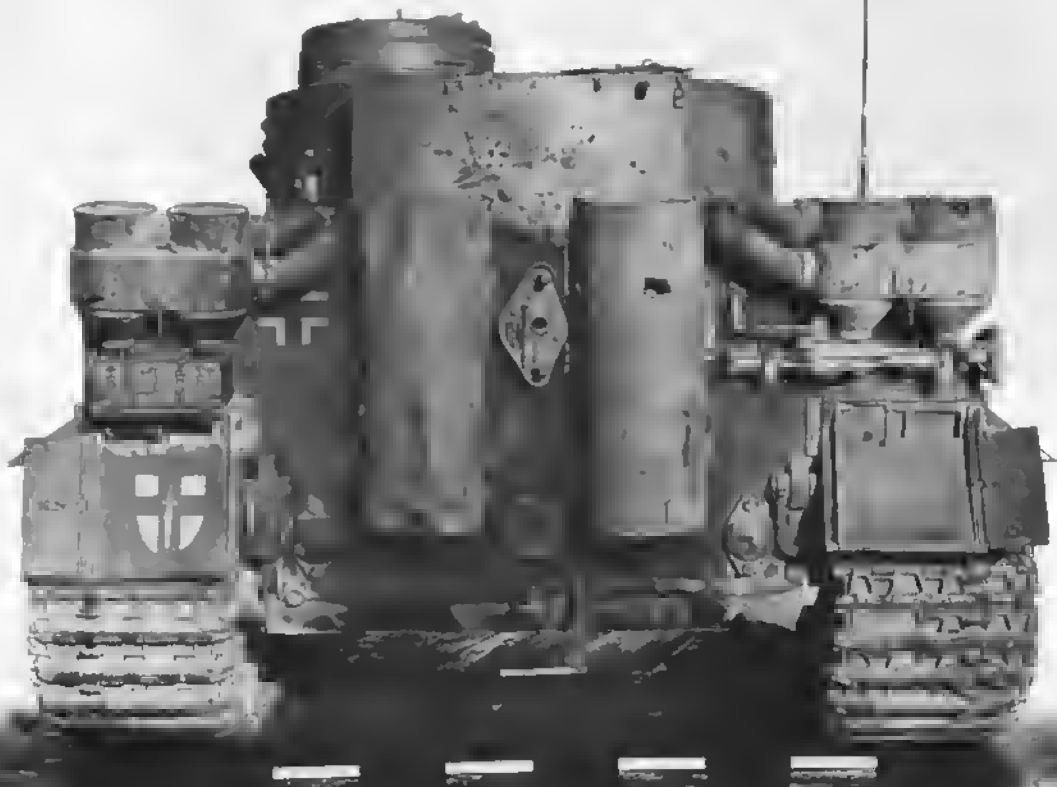


Abandoned by the Germans, this 12-ton Zgkw is being used by British soldiers as a "sight-seeing" bus during a desert excursion. The half-track German series was one of the finest in existence. It was too complicated, however, and demanded constant maintenance efforts.





Last but not least of the German tanks to appear on the African continent was the E version of the famous Tiger. Only one battalion of these vehicles was shipped to Tunisia.



Elaborate dust cleaning filters were necessary to keep the desert sand from entering into the sensitive Maybach engines. Similar arrangements had also been made on tanks operating in the southern part of Russia.

Captured Tiger tanks afforded the Allies an inside view of the German tank industry and their latest creations. Note the snorkel tube fitted to the engine compartment to allow deep fording of these vehicle. A captured 75 mm anti-tank gun can be seen next to the Tiger.

